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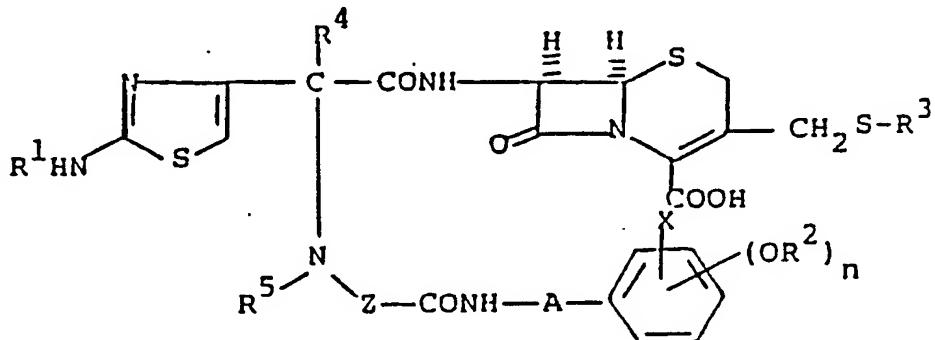
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(54) 3-Heterocyclithiomethyl cephalosporins.

(57) Acyl derivatives of the general formula



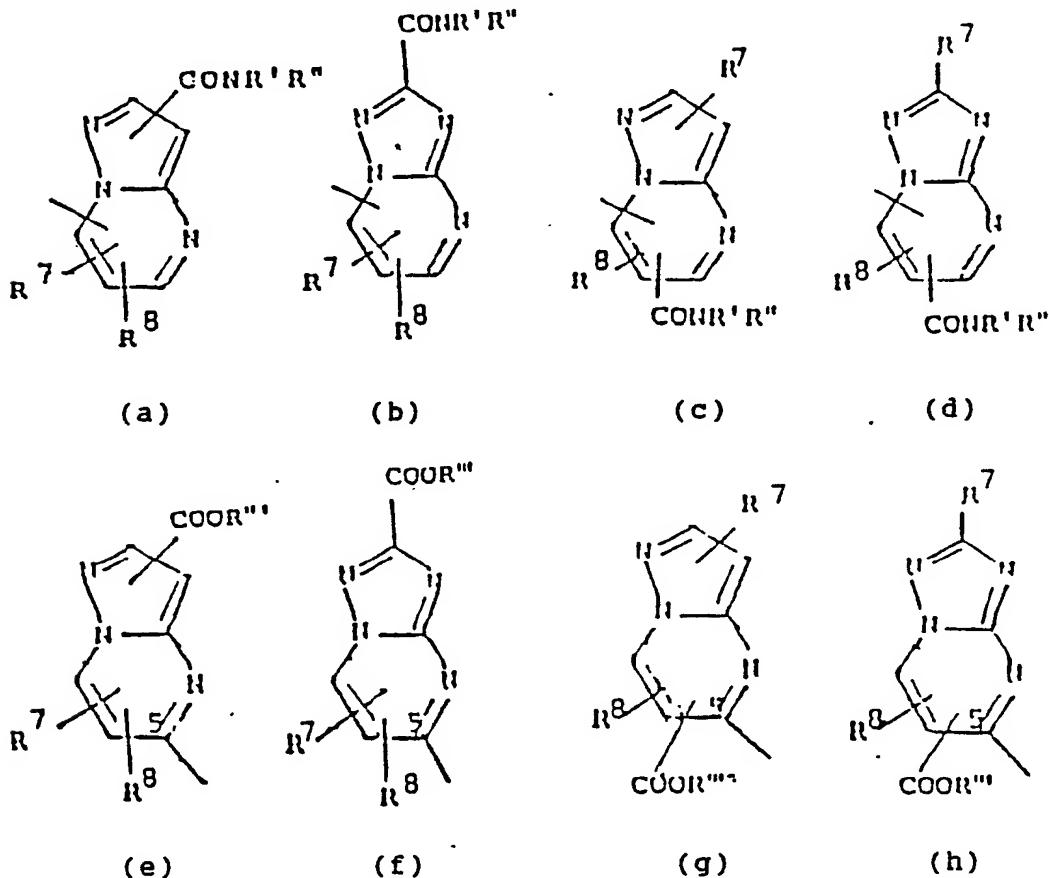
in which A signifies a group of the general formulae

-NHCO-, -NHCONHCO-, -NHC $\text{OCH}=\text{CH}$ -,

$-\text{N}=\text{C}-$



wherein R^6 represents hydrogen or lower alkyl; R^1 and R^2 in each case signify hydrogen or a protecting group, X signifies hydrogen, halogen, lower alkoxy, nitro or an additional group -OR², n signifies the number 1 or 2, R⁴ and R⁵ both signify hydrogen or together signify an additional bond and Z signifies a direct bond or carbonyl (where R⁴ and R⁵ both represent hydrogen) or a group of the formula -O-B- (where R⁴ and R⁵ together represent an additional bond) in which B signifies straight-chain, branched or cyclic lower alkylene; and wherein further R³ signifies a substituted bicyclic group of the general formulae



in which R⁷ and R⁸ each individually represent hydrogen, lower alkyl or trifluoromethyl or (in formulae (a), (b), (e) and (f)) together represent alkylene with 3 or 4 carbon atoms and R', R'' and R''' each individually represent hydrogen, lower alkyl or lower cycloalkyl; whereby compounds of formula I in which R⁴ and R⁵ together represent an additional bond are present in the syn-isomeric form or as a mixture with the anti-isomeric form in which the syn-isomeric form predominates,

as well as readily hydrolyzable esters and salts of these compounds and hydrates of the compounds of formula I or of their esters and salts.

The compounds have antibiotic activity.



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EUROPEAN SEARCH REPORT

Application Number

EP 88 10 5733

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	EP-A-0 189 287 (NIPPON PHARMACEUTICAL DEVELOPMENT INSTITUTE CO., LTD) * Page 0; pages 119-127; claims * ---	1-35	C 07 D 501/36 A 61 K 31/545
Y	EP-A-0 150 507 (MOCHIDA) * Page 0; pages 177-221: claims * ---	1-35	
P,A	EP-A-0 254 495 (SANKEI PHARMACEUTICAL CO., LTD) * Pages 50-63: claims * -----	1-35	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			C 07 D 501/00
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	01-08-1990	LUYTEN H.	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			